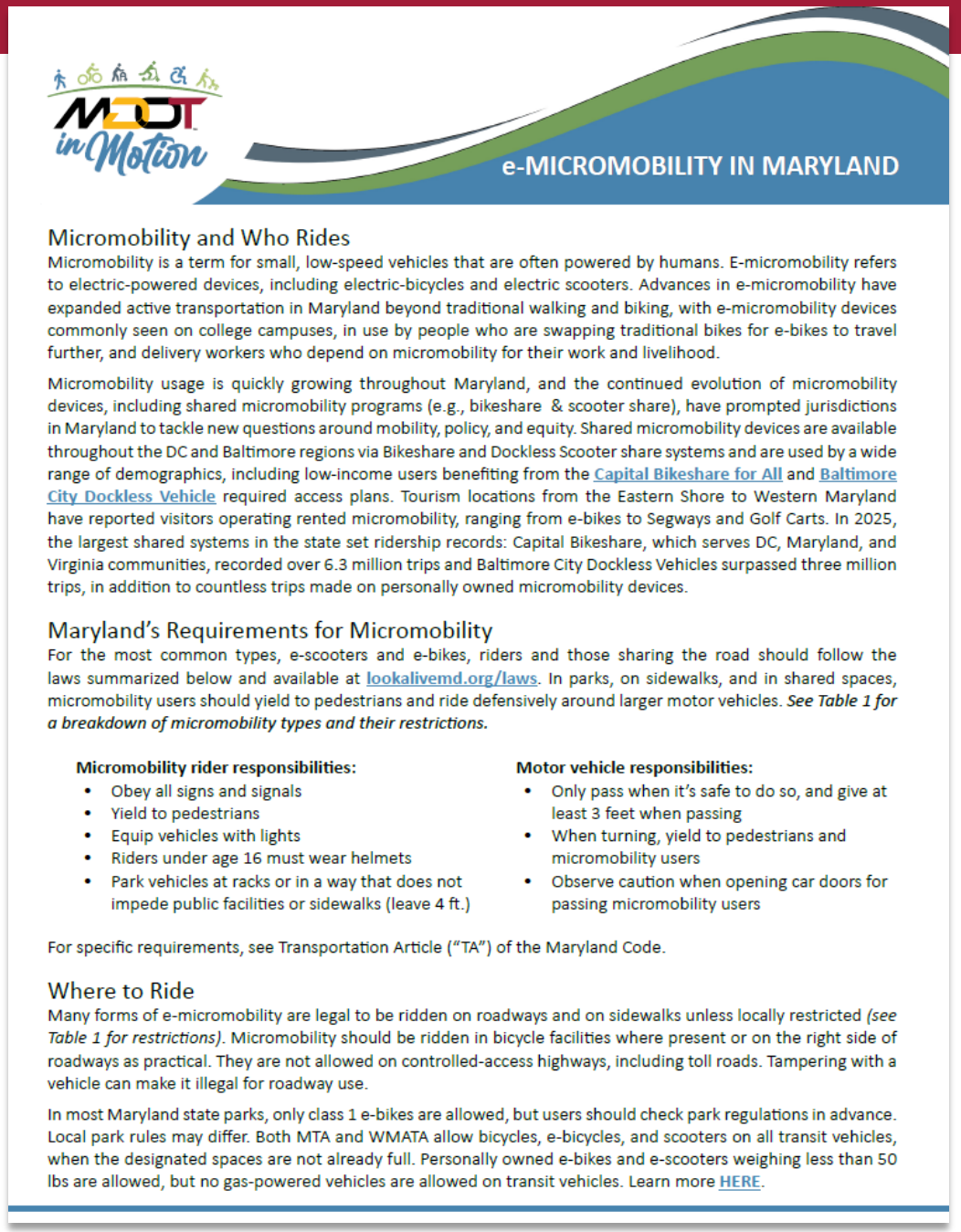
Micromobility 101: On the Ground in Maryland

MDOT Office of Active Transportation and Micromobility

May 12, 2026

Agenda

- On the Ground in Maryland
- Micromobility: Types & Definitions
- Governing Devices: Shared Fleets vs Personally Owned Vehicles
- Data: Ridership and Crashes
- Work Ahead: Applying a Safe Systems approach to micromobility
- 2026 Micromobility work overview



MDOT in Motion

e-MICROMOBILITY IN MARYLAND

Micromobility and Who Rides

Micromobility is a term for small, low-speed vehicles that are often powered by humans. E-micromobility refers to electric-powered devices, including electric-bicycles and electric scooters. Advances in e-micromobility have expanded active transportation in Maryland beyond traditional walking and biking, with e-micromobility devices commonly seen on college campuses, in use by people who are swapping traditional bikes for e-bikes to travel further, and delivery workers who depend on micromobility for their work and livelihood.

Micromobility usage is quickly growing throughout Maryland, and the continued evolution of micromobility devices, including shared micromobility programs (e.g., bikeshare & scooter share), have prompted jurisdictions in Maryland to tackle new questions around mobility, policy, and equity. Shared micromobility devices are available throughout the DC and Baltimore regions via Bikeshare and Dockless Scooter share systems and are used by a wide range of demographics, including low-income users benefiting from the Capital Bikeshare for All and Baltimore City Dockless Vehicle required access plans. Tourism locations from the Eastern Shore to Western Maryland have reported visitors operating rented micromobility, ranging from e-bikes to Segways and Golf Carts. In 2025, the largest shared systems in the state set ridership records: Capital Bikeshare, which serves DC, Maryland, and Virginia communities, recorded over 6.3 million trips and Baltimore City Dockless Vehicles surpassed three million trips, in addition to countless trips made on personally owned micromobility devices.

Maryland's Requirements for Micromobility

For the most common types, e-scooters and e-bikes, riders and those sharing the road should follow the laws summarized below and available at lookalivemd.org/laws. In parks, on sidewalks, and in shared spaces, micromobility users should yield to pedestrians and ride defensively around larger motor vehicles. ***See Table 1 for a breakdown of micromobility types and their restrictions.***

Micromobility rider responsibilities:

- Obey all signs and signals
- Yield to pedestrians
- Equip vehicles with lights
- Riders under age 16 must wear helmets
- Park vehicles at racks or in a way that does not impede public facilities or sidewalks (leave 4 ft.)

Motor vehicle responsibilities:

- Only pass when it's safe to do so, and give at least 3 feet when passing
- When turning, yield to pedestrians and micromobility users
- Observe caution when opening car doors for passing micromobility users

For specific requirements, see Transportation Article ("TA") of the Maryland Code.

Where to Ride

Many forms of e-micromobility are legal to be ridden on roadways and on sidewalks unless locally restricted *(see Table 1 for restrictions)*. Micromobility should be ridden in bicycle facilities where present or on the right side of roadways as practical. They are not allowed on controlled-access highways, including toll roads. Tampering with a vehicle can make it illegal for roadway use.

In most Maryland state parks, only class 1 e-bikes are allowed, but users should check park regulations in advance. Local park rules may differ. Both MTA and WMATA allow bicycles, e-bicycles, and scooters on all transit vehicles, when the designated spaces are not already full. Personally owned e-bikes and e-scooters weighing less than 50 lbs are allowed, but no gas-powered vehicles are allowed on transit vehicles. Learn more HERE.

MDOT in Motion

2050 Bicycle and Pedestrian Master Plan

Vision: Maryland will provide safe and convenient active transportation that supports equitable access for all.

4.5 Micromobility & Dockless Vehicle Recommendations

Several jurisdictions throughout Maryland have begun to incorporate emerging technology into active transportation by implementing or adapting to micromobility and shared vehicle programs. These programs can include docked vehicles as well as dockless vehicles, and the vehicle types are continuously evolving. At the time of this BPMP, the primary vehicle types in the market that are recommended for consideration in these programs, include:

e-Scooters (Bird) | e-Bikes (Spin) | Docked Bike Share (Capital Bikeshare) | Adaptive Vehicles (MedMart)

The two primary operating structures for shared micromobility programs are the permit structure and the service contract/memorandum of understanding structure. These structures are summarized in (Table 4).

TABLE 4: Primary Micromobility Operating Structures

PERMIT STRUCTURE	SERVICE CONTRACT/MEMORANDUM OF UNDERSTANDING STRUCTURE
• Allows for multiple providers to operate in a geographic area. • Allows for annual revisions to permit conditions. • Typically issued through a competitive application process.	• Typically, only allows a single provider to operate in a geographic area. • Provider is selected through a procurement process and typically enters into a multi-year contract.

Based on lessons learned from local implementation and best practices, MDOT has developed a framework for a Model Micromobility Permit & Program structure to guide local jurisdictions in implementing a program suitable to their community needs. The guidance incorporates best practices for permits and program structures, data tracking tools and equity metrics and practices. This framework is available in Appendix G.

MDOT in Motion

Personally Owned Micromobility Vehicles

Shared Micromobility Fleets

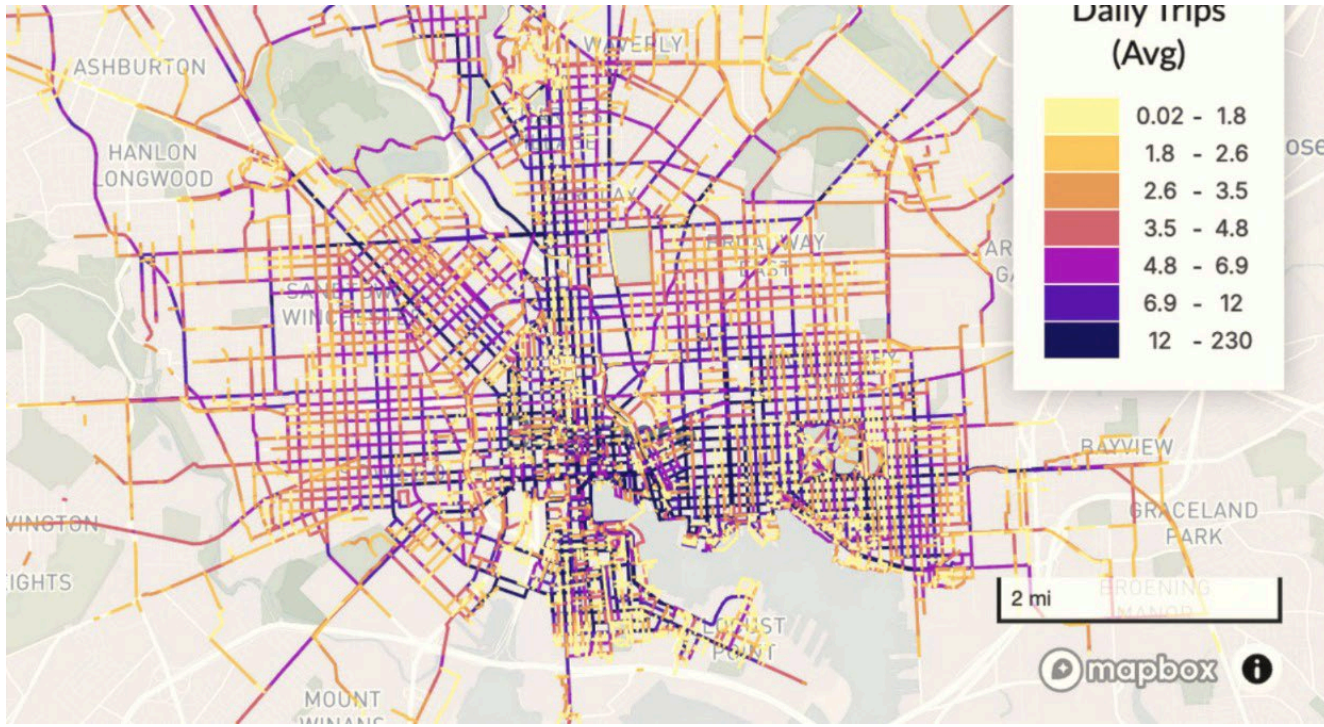
Micromobility Trends in Maryland

10 Jurisdictions with shared micromobility programs (bike and scooter share):

- Record ridership in 2025 and growing
- Data shows increase in ridership in underserved areas and through low-income equity plans

Tremendous growth in private vehicles ownership with high adoption rates from:

- Young people
- Older adults
- Delivery workers



Baltimore Dockless Ride data is publicly available at: https://app.populus.ai/baltimore/public/routes
3,083,473 trips were recorded in 2025

Defining Micromobility

Micromobility is a term for small, low-speed vehicles that are often powered by humans.

E-micromobility refers to electric-powered devices, including electric-bicycles and electric scooters.

Vehicle Code in Maryland is set at the state level in the Transportation Article, but it is difficult to understand and apply to vehicles seen on roadways.

Vehicles defined in Maryland include:

BICYCLE

- Manual pedal bike
- Bicycle laws apply
- Permitted on sidewalk unless prohibited by local ordinance
- Not permitted on roads with speed limit above 50 mph

E-BIKE

- Motor of 750 watts or less
- Bicycle laws apply
- E-assist when pedaling
  Class 2 e-assist without pedaling
- 20 mph max speed (Classes 1-2)
  28 mph max speed (Class 3)

SCOOTER\ E-SCOOTER

- 2-wheeled device with handlebars designed to be stood on by operator
- 20 mph max speed
- Permitted on sidewalk unless prohibited by local ordinance
- Not permitted on roads with speed limit above 50 mph

EPAMD

(Electric Personal Assistive Mobility Device)

- Segways and hoverboards; Non-tandem wheels; self-balancing
- 15mph max
- Must ride on sidewalk where present
- Not permitted on roads with speed limit above 30 mph

GOLF CART

- 20 mph max speed
- Illegal on state roadways
- May cross state roadways at intersections

MOPED\ MOTOR SCOOTER

- Non-pedaled vehicle with motor and automatic transmission
- Requires title, insurance, and license to operate; 30 mph max
- Cannot be ridden without protective gear
- Not permitted on roads with speed limit above 50 mph

LOW SPEED VEHICLE

- Requires title, insurance, and license to operate
- 4-wheeled electric vehicle
- 20-25 mph max speed
- Not permitted on roads with speed limit above 30 mph

MINIBIKES\ DIRT BIKES

- 2-3 wheeled vehicle
- Not subject to registration
- Illegal on state roadways; retailer responsible for informing purchasers of this information

Defining Micromobility

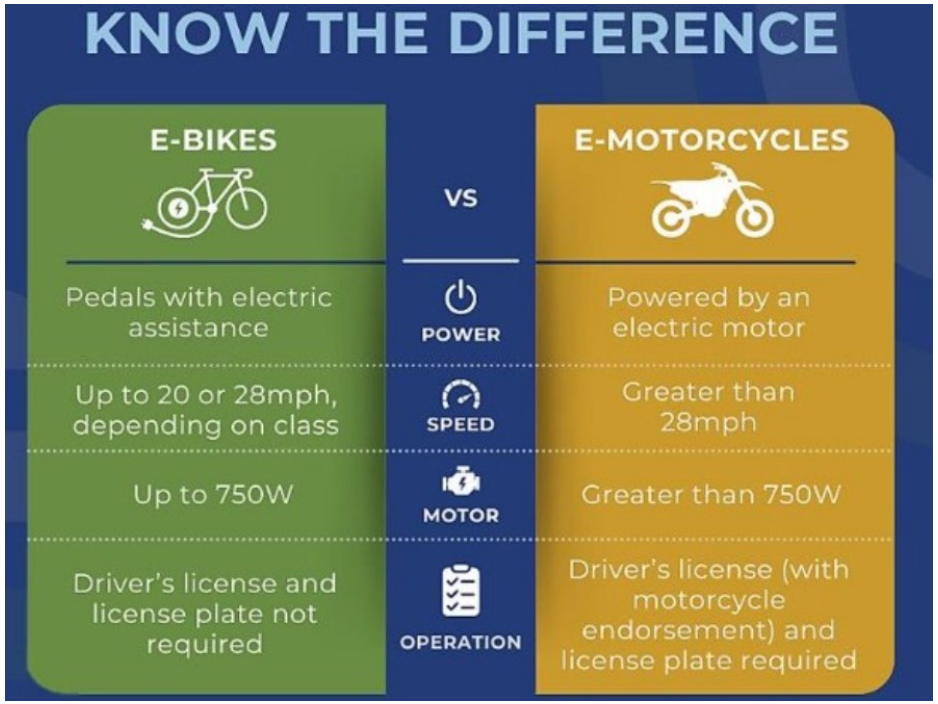
As new vehicles emerge, conveying vehicle types, code, and rules of the road for each is increasingly difficult. The main distinction many states are grappling with are vehicles which are road legal and those which are not. Legal, Class 1-3 E-Bikes do not go much faster than a competitive cyclist. In Maryland, they are required to have a class sticker and a battery sticker.

UL 2271

CLASS 1 750W 20MPH

CLASS 2 750W 20MPH

CLASS 3 750W 28MPH



If an owner tampers with or removes the speed governor on an e-bike, may no longer be street legal.

Defining Micromobility

The call to action: Transportation professionals need to lead the way and help educate our partners and advocates on the ground about vehicle types and safe riding:

- Local Jurisdictions, including parks departments
- Law Enforcement and first responders
- Schools
- Parents

In Maryland, MDOT is partnering with our Motor Vehicle Administration's Maryland Highway Safety Office to develop and distribute educational materials. MHSO is the MDOT lead for behavioral change and NHTSA funding

POP QUIZ: Which one is road- legal?

Top Speed: 20 mph

Motor: 750 Watts

Safety Advertising:

- Battery certification included
- Class 2 e-bike with restrictions noted

Class 2 E-bike, allowed on most Maryland roadways, prohibited on many trails

Top Speed: 20 mph

Motor: 1800 Watts

Safety Advertising:

- High visibility lights
- Battery certification included

E-moto with motor 2.5x more powerful than an e-bike, may require title, license, registration, and insurance to operate on most Maryland roadways, prohibited on trails and bike facilities.

MDOT in Motion

Micromobility Regulation Overview

Intended for distribution to local partners, law enforcement, and advocates:

- Micromobility and who rides
- Requirements
- Where to Ride
- Maintaining E-micromobility and battery safety
- Common types of Micromobility (pictured to right)

Available at mdot.Maryland.gov/micromobility

Table 1: Common Types of Micromobility

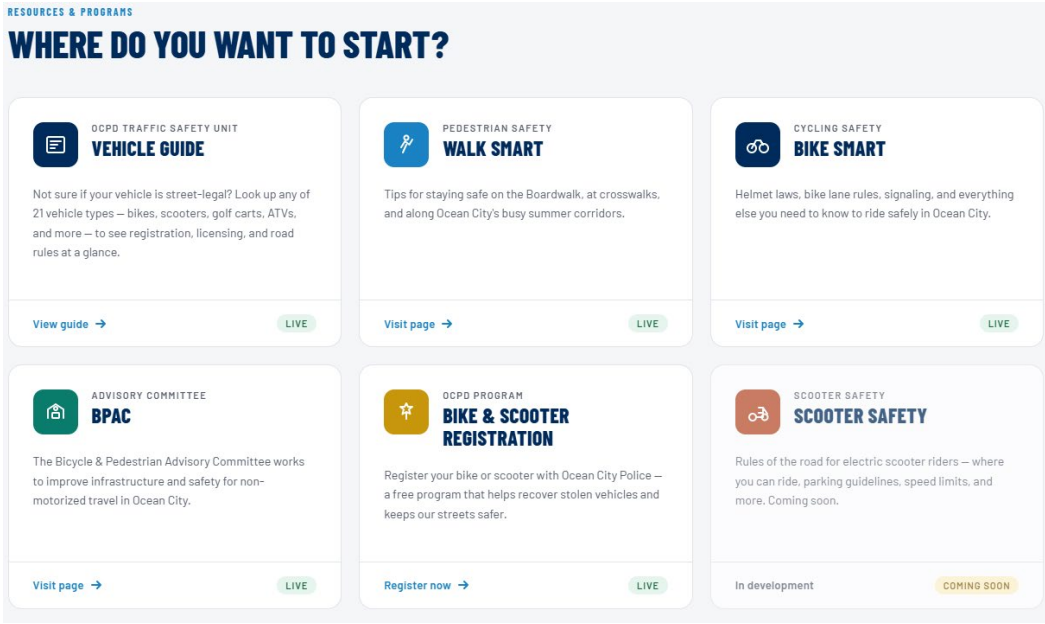
Vehicle Characteristics	Requirements and Restrictions
Bicycle §11–104 Manual powered pedal bike, with 2 or three wheels and a rear drive train.	• Permitted on sidewalk unless prohibited by local ordinance • May not ride on roadway with a speed limit over 50 mph • May not carry passenger unless it is designed for and equipped with a seat for each passenger • Must be equipped with brakes and lights in low visibility
E-Bike §11–117.1 All e-bikes must be operable using pedals without the e-assist. **Class 1** – bicycle with a motor of 750 watts or less, e-assist when pedaling; 20 mph max assist	• Bicycle requirements and restrictions apply
Class 2 – bicycle with a motor of 750 watts or less, *e-assist throttle which functions without pedaling*; 20 mph max assist	• Bicycle requirements and restrictions apply • Restricted use in state parks
Class 3 – bicycle with a motor of 750 watts or less, e-assist when pedaling; 28 mph max assist	• Bicycle requirements and restrictions apply
Scooter § 11-154.1 **and E-Scooter** §11–117.2 Two (2) wheeled device with handlebars which is designed to be stood on by the operator; 20 mph max.	• Bicycle requirements and restrictions apply
Electric Personal Assistive Mobility Device (EPAMD) TA § 21-101 Includes Segways and hoverboards; Non-tandem wheels; self-balancing; 15 mph max.	• Must ride on the sidewalk where present • May not ride on any roadway with a speed limit over 30 mph
Low Speed Vehicle §11–130.1 Four wheeled electric vehicle; 20-25 mph max.	• Requires title, insurance, and license to operate • May not ride on roadway with a speed limit over 30 mph
Golf Carts §21–104.2 Four wheeled vehicle; 20 mph max.	• Illegal on state roadways, may cross state roadways at intersections
Mopeds §11–134.1 Can be operated by pedals, low powered (1.5 horsepower max); 30 mph max. *Moped does not include an electric bicycle.*	• Requires title, insurance, and license to operate • Cannot be ridden without protective gear • May not ride on roadway with a speed limit over 50 mph
Motor Scooters §11–134.1 Non pedaled, seated vehicle with motor and automatic transmission; 30 mph max.	• Requires title, insurance, and license to operate • Cannot be ridden without protective gear • May not ride on roadway with a speed limit over 50 mph • May not carry passenger unless designed for and equipped with a seat for each passenger
Minibikes and Dirt Bikes §11–134.4 Motor vehicle with two-three wheels, not subject to registration under Title 13 of TA.	• Illegal on state roadways, retailer is responsible for telling purchasers this information
Please note the above information is a summary advisory and should not be taken as legal advice. For specific requirements and restrictions, see Transportation Article ("TA") of the Maryland Code.	

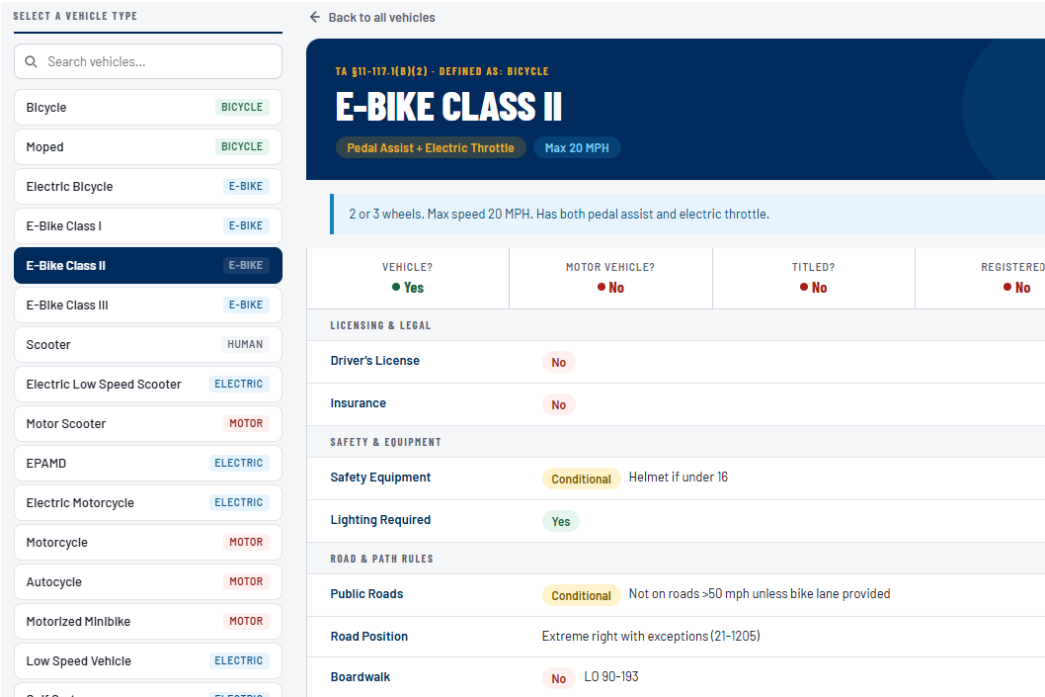
Example Local Regulation Overview

Ocean City Police Department developed a local Safety Hub. E-micromobility has been a huge source of mobility for seasonal workers and tourists, but OCPD want educate everyone to reduce conflicts:

- MHSO grant for officer overtime
- Website to be shared via QR code
- Main push is for legal vehicle education and vehicle registration
- Website built in house

Learn more at the May 21 webinar!





Pictured: https://safe.oceancitymd.gov

Governing Micromobility

MDOT

- Define vehicles and rules of the road – **Micromobility Regulation Overview now available**!
- Set standards for inclusive roadway design and parking on state roads and transit facilities
- Share information with local jurisdictions and stakeholders about best practice for shared fleets, education, vehicle maintenance and riding safely

Local Jurisdictions

- Permit shared fleets
- Set standards for inclusive roadway design and parking on local roads and facilities
- Disseminate information and enforce vehicle maintenance and riding safely

Micromobility in Maryland

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Micromobility Regulation Overview

More information about Micromobility in Maryland can be found in the 2050 Bicycle and Pedestrian Master Plan, published in 2024. Different roles MDOT plays in micromobility can also be explored below.

MDOT's Role in Micromobility

Defining vehicle types and legal uses

As new types of mobility arise and become more common, their place on the roadway

Accommodating micromobility in Complete Streets design standards and processes

The most common micromobility vehicles

MDOT's new Micromobility Webpage, source: Micromobility in Maryland

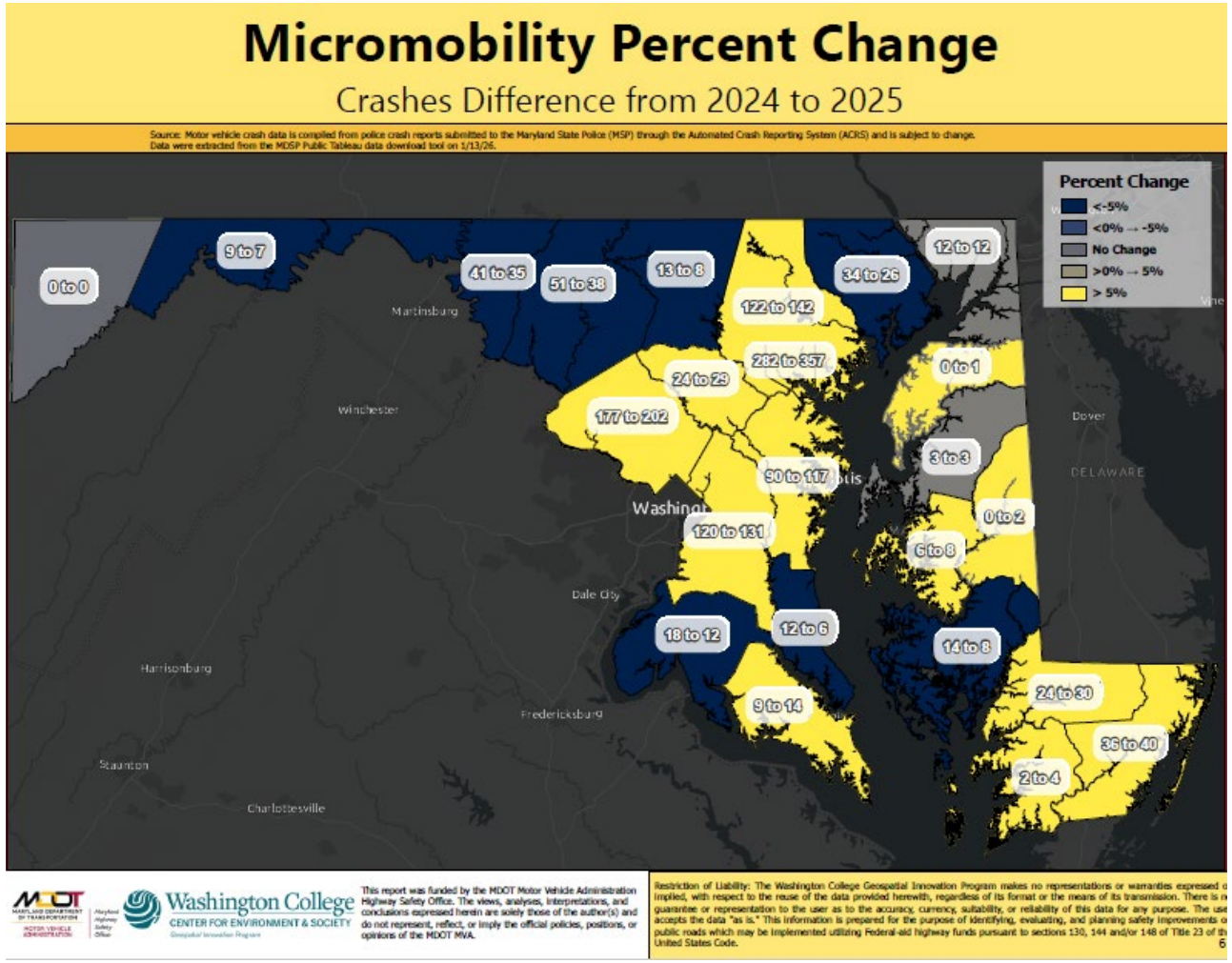
Micromobility Data Analysis

Starting on January 1, 2024, crash reports filed in the Maryland ACRS system have additional non-motorist options. This provides 2 years (2024 & 2025) of crash data with micromobility fields as an option. The data are still imperfect, and additional training is needed for law enforcement to improve crash coding.

MDOT's crash analysis priorities are:

Crash Data	Purpose
Crash per vehicle type	Informs severity of safety issues
Who is involved	Informs targeted distribution of safety materials
Risky behaviors	Informs targeted safety messaging
Crash patterns – time of day/week / location (SHA context type)	Informs messaging, distribution and potentially engineering safety countermeasures

Micromobility Crash Data



Micromobility Only Crashes

2,337
Micromobility Users in Crashes

69
In Distracted Crashes

8
In Impaired Crashes

Injury Severity	Count
Suspected Minor Injury	1223
Possible Injury	460
No Apparent Injury	342
Suspected Serious Injury	285
Fatal Injury	27

Injury Severity

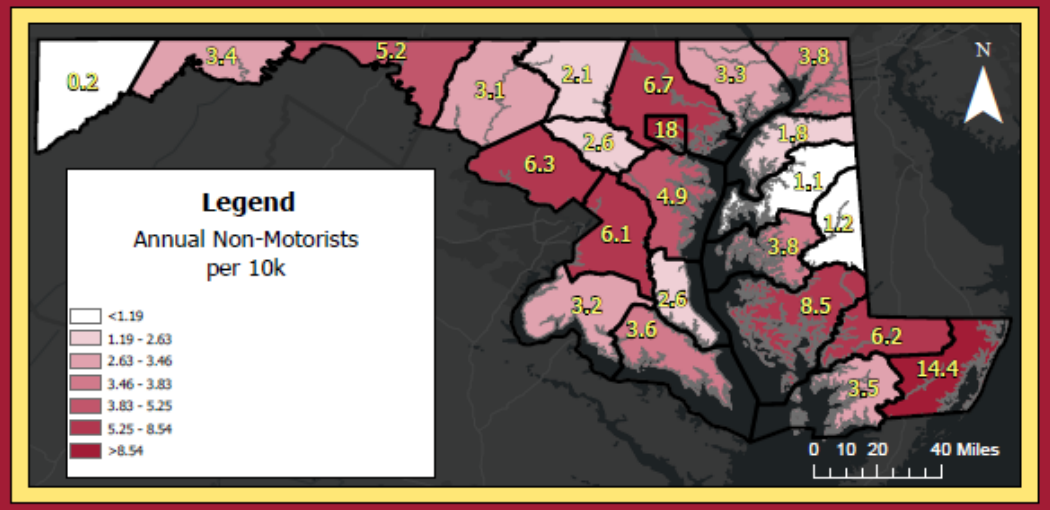
	No Apparent Injury	Possible Injury	Minor Injury	Serious Injury	Fatal Injury
Electric	152	215	551	151	13
Non-electric	190	245	672	134	14

Non-Motorists and Micromobility

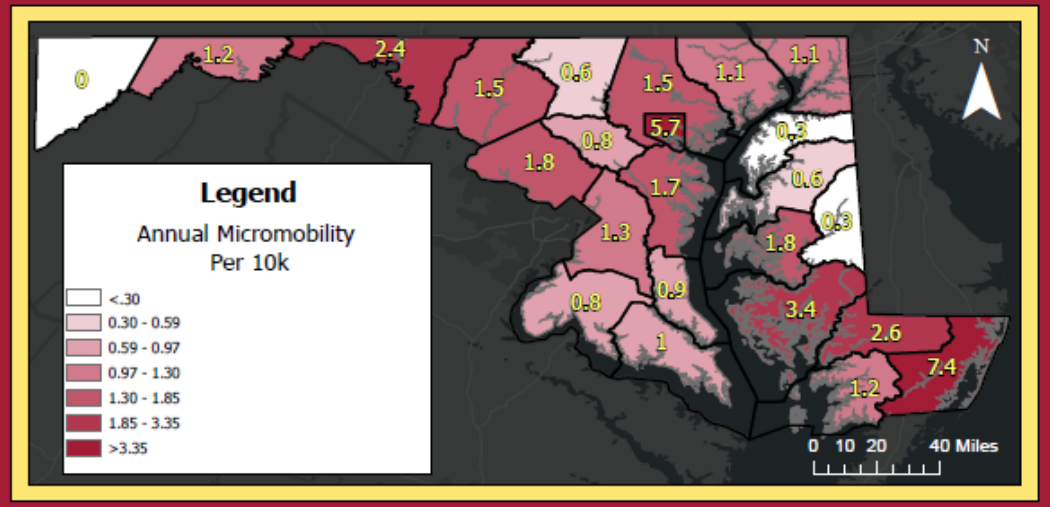
Rates by Jurisdiction (2024-2025)

Source: Motor vehicle crash data is compiled from police crash reports submitted to the Maryland State Police (MSP) through the Automated Crash Reporting System (ACRS) and is subject to change. Data were extracted from the MDSP Public Tableau data download tool on 1/13/26.

Non-Motorists



Micromobility



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Electric and Non-Electric Micromobility

Rates by Jurisdiction (2024-2025)

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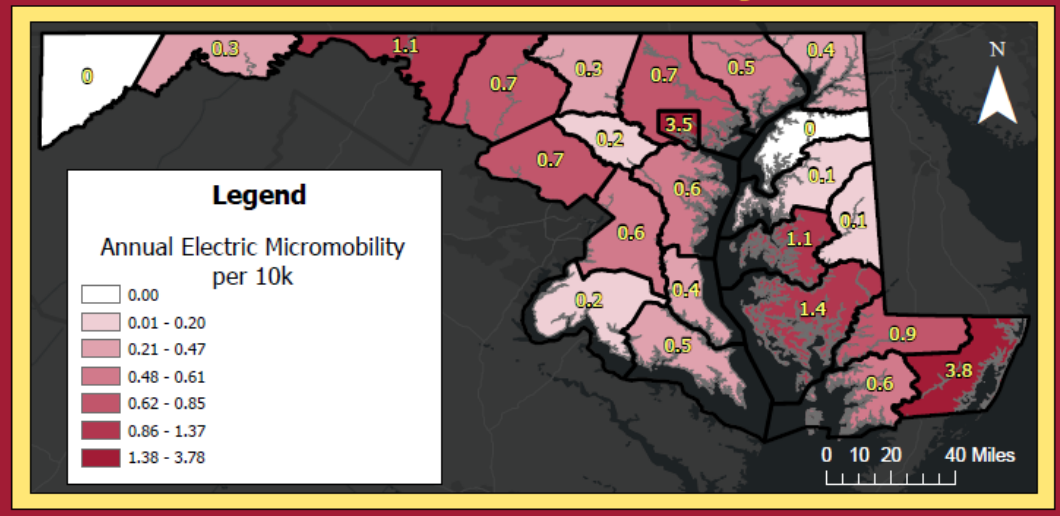
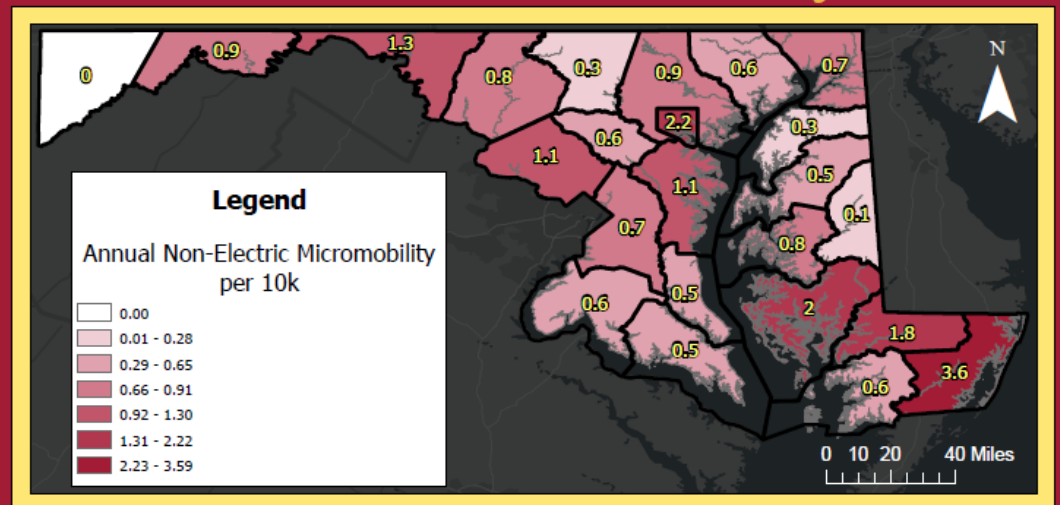
Electric Micromobility



Non-Electric Micromobility



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Crash Locations

Location and Hours

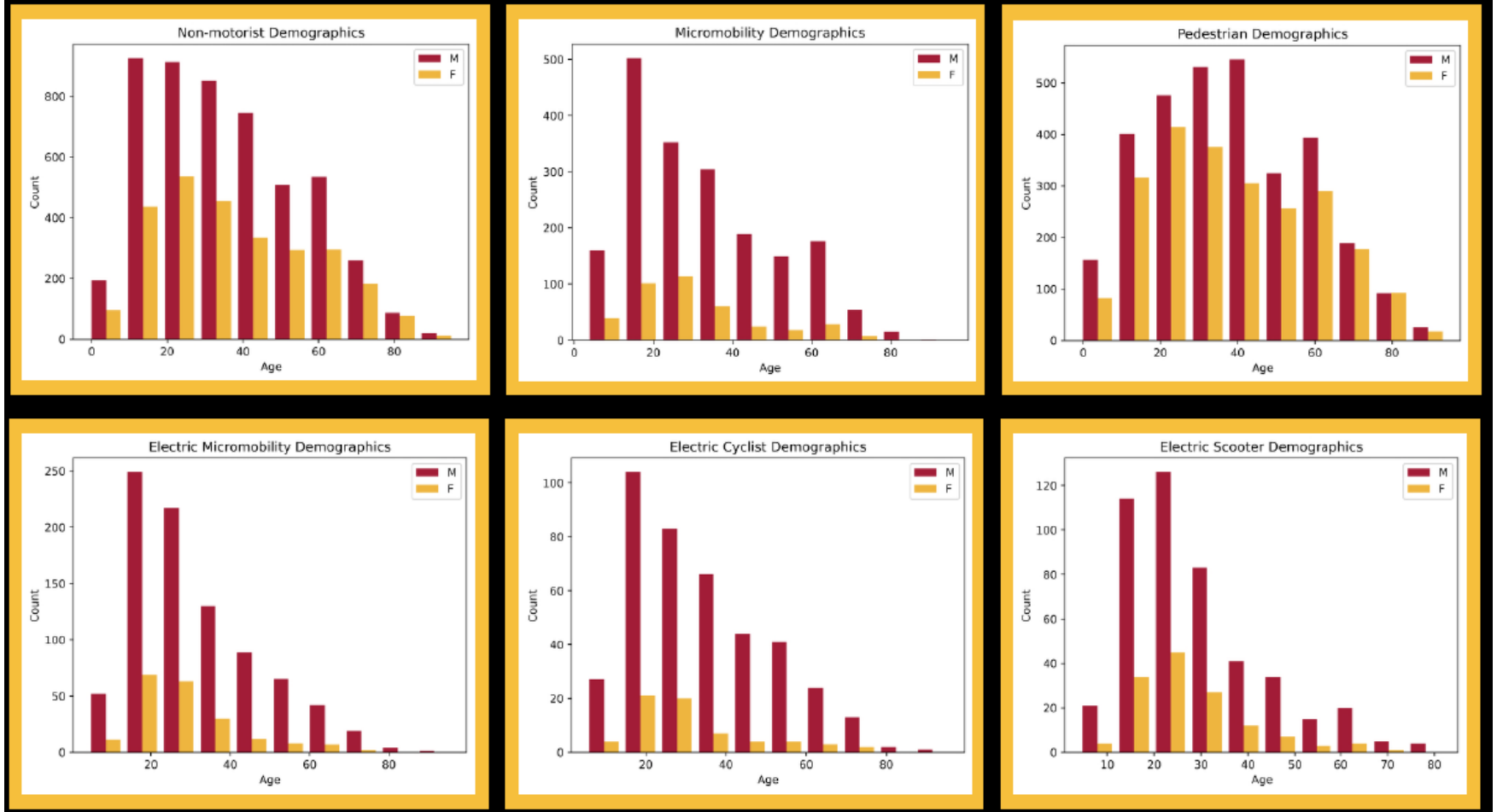
	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Intersection – Marked Crosswalk	3	0	3	1	2	3	10	20	23	21	25	20	27	30	30	42	49	61	30	32	26	20	12	13
Travel Lane – Other Location	6	4	6	4	0	1	6	14	18	15	18	20	24	24	19	35	39	41	36	25	21	14	16	8
Intersection – Other	4	5	1	1	0	6	6	12	9	15	12	12	9	21	36	31	49	32	31	21	20	15	9	7
Shoulder/Roadside	3	4	1	0	1	2	6	13	8	7	13	5	9	8	23	24	23	28	15	14	6	11	5	5
Intersection – Unmarked Crosswalk	1	1	3	0	0	1	3	6	3	5	8	3	13	15	26	21	17	19	18	16	10	4	5	0
Other	2	2	0	1	1	0	1	1	2	7	7	5	6	8	8	16	14	24	14	18	7	8	5	3
On-Street Bike Lanes	2	2	1	1	0	1	2	3	6	5	5	5	2	4	10	4	10	8	9	2	4	3	3	1
Sidewalk	1	0	0	0	0	0	0	3	5	4	3	6	9	7	9	11	7	9	6	1	5	2	2	1
Driveway Access	0	1	0	0	0	1	0	3	1	5	5	3	6	7	5	7	14	7	7	3	4	4	2	1
Unknown	3	1	1	0	0	0	1	1	2	3	0	4	2	2	5	7	10	8	3	6	7	2	1	3
Midblock – Marked Crosswalk	0	0	0	0	0	0	0	3	0	0	0	2	2	1	2	2	6	2	4	1	1	0	0	0
Shared Lane Markings	0	0	1	1	0	0	0	0	1	0	1	0	1	3	1	3	1	4	1	2	0	1	1	0
Non-Trafficway Area	0	0	0	0	1	1	0	0	1	1	0	0	1	2	1	2	1	3	1	2	1	0	0	0
Separated Bike Lanes	0	0	0	0	0	0	0	1	1	0	0	0	2	1	1	2	1	2	2	1	0	0	0	0
Off-Street Trails/Sidepaths	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	3	0	1	3	1	0	0	0	0
On-Street Buffered Bike Lanes	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	2	1	2	0	0	1	0	0	0
Shared-Use Path or Trail	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	1	0	1	0	0
Signed Route (no pavement marking)	0	0	0	0	0	0	2	1	0	0	0	0	0	0	1	0	3	0	1	0	0	0	0	0
Median/Crossing Island	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1	1	0	0	0	0	0	0	0

Day/Time	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Grand Total
0000	11	1	1	0	5	3	4	25
0100	7	1	0	2	1	2	7	20
0200	6	0	2	0	0	2	7	17
0300	1	0	2	2	2	1	1	9
0400	0	0	0	0	3	1	1	5
0500	1	3	6	1	3	2	0	16
0600	3	1	7	8	6	9	3	37
0700	7	19	9	18	15	12	3	83
0800	5	7	13	11	14	20	10	80
0900	3	13	13	15	16	18	11	89
1000	15	10	17	11	19	11	16	99
1100	8	10	9	9	15	14	21	86
1200	16	18	15	16	9	18	22	114
1300	25	19	11	20	21	20	18	134
1400	31	28	21	29	26	21	24	180
1500	24	32	31	23	33	39	32	214
1600	18	33	51	31	46	41	28	248
1700	22	34	43	31	59	35	28	252
1800	20	24	29	28	30	24	27	182
1900	16	25	19	27	25	21	13	146
2000	14	14	12	18	16	18	21	113
2100	12	9	12	11	17	10	14	85
2200	5	6	4	6	13	13	14	61
2300	7	4	4	5	9	9	4	42
Grand Total	277	311	331	322	403	364	329	2337

MDOT in Motion

Age and Sex Charts

Source: Motor vehicle crash data is compiled from police crash reports submitted to the Maryland State Police (MSP) through the Automated Crash Reporting System (ACRS) and is subject to change.
Data were extracted from the MDSP Public Tableau data download tool on 1/13/26.



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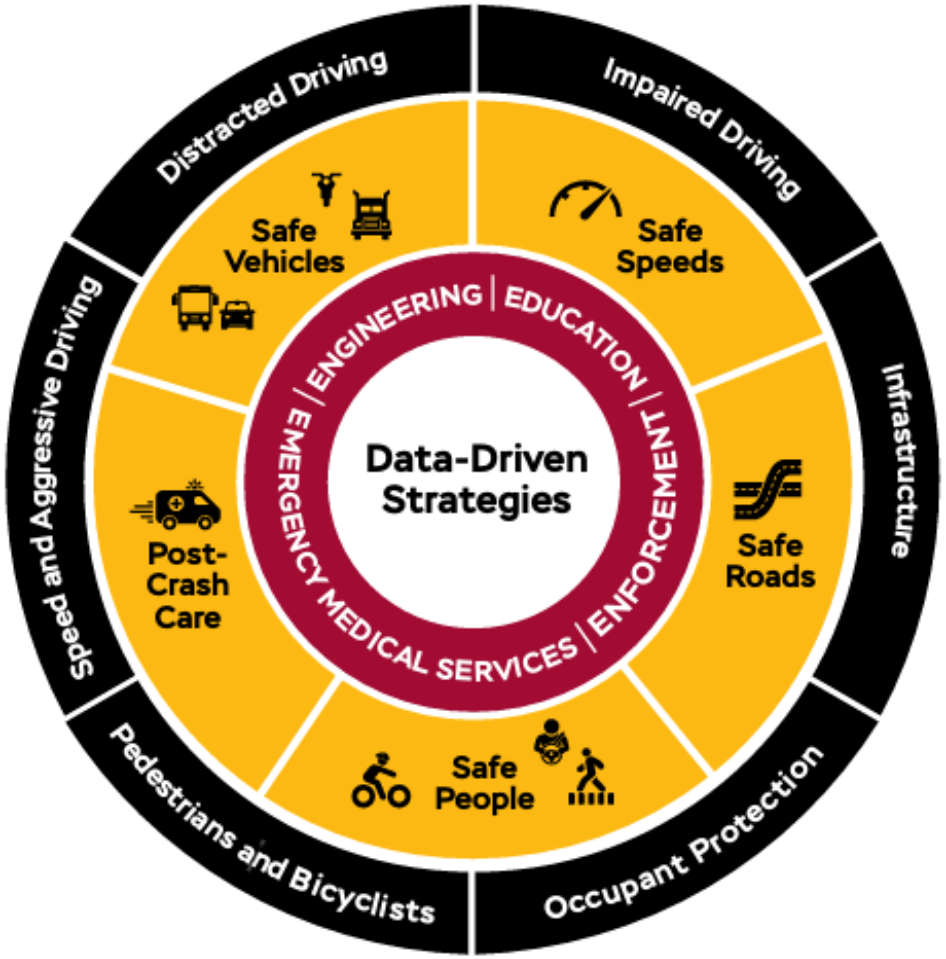
Applying a Safe Systems Approach

- **Safe Vehicles:** Legal Vehicles meet safety standards
- **Safe Speeds:** Legal Vehicles have speed governors
- **Safe Roads:** Complete Streets provide safe facilities
- **Safer People:** Rider and Driver education teaches people to share the streets
- **Post Crash Care:** Work with law enforcement and first responders can provide better crash data about where and how crashes occur.



MDOT 2026 Micromobility Work

Available Now: *Micromobility Regulation Overview, one-pager*

Micromobility Safety Education

- Frequently asked questions
- Crash data safety analysis
- Safe riding information for all users
- Information for retailers and buyers about fire safety and maintenance

Model Permit and Toolkits for Local Jurisdictions

- Guidance for shared fleets
- Permitting language
- Best practices for implementation: equity plans, parking, and engagement for safety education

www.mdot.Maryland.gov/micromobility

Micromobility Safety Education

- MDOT communications: website, email blasts, sharing with government partners
- Each product will have associated social media graphics, a social media kit, and additional communication collateral to be used by partners
- Developing a targeted distribution strategy:
  - Advocates
  - Schools (high school, university)
  - At-risk populations (identified through crash data and polls)
  - Retailers (Research into online retails as well)

Bike Doctor, with 6 locations in MD sells 156 different e-bikes

Contact

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